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ISSUE 4

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An ATARI™ Users Magazine

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Cover illustration by Mike Roper

PAGE 6

Editor **Les Ellingham**

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PAGE 6 is a Users magazine and relies entirely on readers support in submitting articles and programs. The aim is to explore Atari computing through the exchange of information and knowledge and we cannot unfortunately pay for articles published. We hope you will gain satisfaction from seeing your work published and in turn we hope you will learn from articles submitted by other readers.

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EDITORIAL

THE ATARI WORLD

Welcome to a truly international edition of PAGE 6 which features articles and programs from as far away as New Zealand and Australia as well as from the U.S.A. There are of course also programs, articles and reviews from the U.K. Rather unbelievably, PAGE 6 now has subscribers in Austria, Sweden, Portugal, Greece, New Zealand, Australia and America as well as places as far apart in Great Britain as Guernsey and the Isle of Benbecula in the Outer Hebrides! Atari Basic is obviously an international language and it is very exciting to find individual enthusiasts and User Groups all over the world.

The purpose of having an international edition is twofold. Firstly to reflect the wide interest in Atari computing and share our knowledge and understanding, but more importantly to show Users in the U.K. that we are in danger of being left behind. You would expect the folks in America to be fairly advanced in their knowledge—after all they invented the machine—but it came as a pleasant surprise to find that there is quite an active Atari community in New Zealand and Australia. What's more the articles and programs featured in their User Group newsletters are of a very high standard. So where does that leave us? Seemingly a long way behind, but I can't really believe that British Atari owners are not capable of producing some really good programs and articles. Some of these have been featured in this and previous issues of PAGE 6 and all those contributors can be proud that their work is being seen all over the world, but there is still a need for many more articles and programs. It is not that we can't understand computers—just look at the number of programs written for other machines like the BBC and Spectrum—so come on Atari owners get in touch if you have a program or article which could be featured in PAGE 6. It is very nice to be able to feature programs from overseas but PAGE 6 ought to be a forum for EXCHANGE of ideas and programs and I hope that we in the U.K. can provide our overseas friends with something of interest.

BACK ISSUES

ARE NOW AVAILABLE

Issues 1, 2 & 3—70p each inc. p. & p.
Two issues together £1.25. All three £1.85

NEWS

ATARI'S NEW MACHINES

Biggest news this month, indeed this year, is the unveiling by Atari at the Chicago Consumer Electronics Show of FOUR new machines. Top of the range is the 1450XLD which if marketed properly could leave a lot of rotting Apples about! The computer features a built-in double-sided, double-density disk drive with provision to add a further drive. Also a built-in modem and a built-in voice synthesizer. The disk drive will operate two to three times faster than the current drive. Nothing revolutionary you might think, but wait for the price. Under $1000. That's just over £700. What is going to make this all the more remarkable is a CP/M expansion unit allowing literally hundreds of business programs to run on the Atari.

Next down the line is the 1400XL which is essentially the same without the built-in disk drive, followed by the 800XL about which no details are known at present. The lower end of the range is the 600XL which comes as 16K but is expandable to 64K. All the machines are said to include built-in Atari Basic (Revision B).

Not only new computers but new peripherals. A new letter quality printer, the

News

ATARI 1027, which does not require an interface. A new Disk Drive, the 1050, with DOS 2.0S and DOS 3.0 available later in the year providing double density. A new direct-connect modem with auto facilities. New joysticks (including remote control), a TRAK-BALL, light pen and (hopefully at a reasonable price) a graphics touch tablet.

NEW 'ATARI ONLY' CENTRE OPENS

There has been quite a stir around Birmingham in recent weeks with the opening of the Birmingham Atari Centre run by Home Entertainments Ltd. The shop is believed to be the U.K.'s first dedicated Atari Centre selling Atari Home Computers and supporting software and peripherals. No Spectrums, no Orics, no Vics, nothing but the best!

Before embarking on this venture Home Entertainments did a lot of market research amongst existing computer owners and intending purchasers. They found an almost unanimous response, what people wanted was somewhere they could find detailed information on their computer, where they could ask questions and be confident of obtaining a direct and knowledgable reply. In short, somewhere that dealt with their computer and their computer only. A specialist shop. With the Birmingham Atari Centre, Home Entertainments have set out to provide just that. All of their staff are Atari owners and enthusiasts headed by Retajl Sales Manager Keith Mason whose whole philosophy is to provide a complete service for the Atari owner. Keith told me, " What we hope to do is build a reputation on service and knowledge of the whole Atari scene, so that any Atari owner, or prospective purchaser, will know that he can come to us in the full expectation of finding what he wants or having his questions answered." To this end, the company has been working closely with the local User Group and hope to establish a back-up service second to none. If the folks in the shop can't answer your question they should be able to put you on to someone who can.

At the moment the Company are concentrating on providing a first-class service for users in the West Midlands. They will shortly turn their attention to Mail Order but only when they know they can extend their service to this area. They have also introduced a Home Demonstration team, again staffed by people with Atari background, to provide you with a demonstration of the Atari Computers in your own home where you can see the machines to best advantage and ask whatever questions you wish. Here again the emphasis will be on after sales service as they are conscious that home computing goes far beyond just buying a piece of hardware. Once you have bought an Atari, you can be confident that the full knowledge and assistance of the people at the Atari Centre will be available to you.

The shop has only been open a few weeks but already Keith Mason has built up a considerable number of contacts in America and was one of the first in the U.K. to learn about Atari's new machines. With the phone lines buzzing between here and the U.S., there should be no more long waits for news to reach the U.K., which can only be to the good of all U.K. Atari owners.

The prospects certainly seem exciting but only time will tell whether the U.K. can support a dedicated independent Atari Centre. With many of the other 'specialist' shops drifting away to other machines there is certainly a need amongst Atari owners for such a centre but also a lingering doubt about whether a retail outlet dedicated to one machine can survive. That will depend very much on the individual user. If only Atari would recognise the amount of support and enthusiasm that exists for their machines and adjust their marketing accordingly, there would be no doubt about the success of the Birmingham Atari Centre and of Atari as the number one computer in the U.K.

INPUT

Dear Les,

The Calendar program in Issue 3 was one of the first I have managed to type in without a bug. However on checking some dates in the 1880's the program was found to be incorrect. I am sure that there are many of us for whom 'Grandad's birthday' would have been incorrectly calculated. The reason is simple. The year 1900 was not a leap year.

England did not adopt the Gregorian calendar until 1752 and so I can only offer modifications which will allow days between 1753 and 2099 to be calculated. The years 1800 and 1900 were not leap years—the year 2000 will be a leap year. Modifications are as follows:

```
6 GRAPHICS 18:POSITION 6,4:? #6;"C
ALENDAR"
7 POSITION 4,7:? #6;"1753 TO 2099"
8 FOR Q=1 TO 2000:NEXT Q
335 IF YEAR<=1900 THEN D=D+1
336 IF YEAR<=1800 THEN D=D+1
355 IF YEAR=1900 AND B=29 THEN B=2
8
356 IF YEAR=1800 AND B=29 THEN B=2
8
420 IF D>=8 THEN D=1
```

Steve Tullett,
Midlothian

Dear Sir,

After purchasing Issue 2 of your magazine, I felt that I must write to congratulate you and to send a subscription for the next six issues.

I have a useful tip that you may wish to publish. Several of my friends also own Atari 400's and it seems to be a common problem that after several hours use, the whole thing seizes up. The keyboard becomes inoperable and the machine refuses to LIST, RUN or even ERROR. As the System Reset key is also disabled the only way out is to switch off and start again, losing the resident program. To prevent this happening, at the start of your program POKE 832,6. Upon doing this I no longer had problems with a program which frequently disabled my machine.

Tony Amesbury,
Doncaster

***Is this really true! Could this be the fix for Atari 'lock-up' that everybody has been searching for? Perhaps some of the more technically minded readers could let us know what this POKE actually does. I can find no reference to it in any of the Memory Maps.*

Dear Sir,

With regard to T. C. Mayers' letter in Issue 2 concerning difficulty in loading a program, I have some information which readers might find useful.

Firstly, if you are having difficulty in CLOADing a program and Error 143 or 140 appears at the beginning when the program is about to load or, if after about a minute Error 138 or 143 appears, then note whether the CLOADing sound is a high-pitched tone or a low-pitched tone. If the tone is high then the computer is trying to read Data but there is nothing there. Rewind the tape and then advance it 1 count on the counter. If the same thing happens again then rewind and advance it another count and so on until you get it right.

If the tone is low-pitched then the computer has begun reading Data part way through a program. This usually happens when a program has been recorded in the middle of a tape. Again rewind to where you started to CLOAD and advance the counter one count at a time until the program loads.

I hope that this will help some of your readers. As a final warning, don't leave your program recorder near a television speaker as this can de-magnetise the tape causing a loss of all your programs.

Congratulations on a great magazine. Keep up the good work.

Stuart Norse,
Hoddlesdon, Lancs.

Dear Les,

Congratulations on a steadily improving magazine.

Maplin of Southend, Essex, do upgrades on the 400. They also state that their uplift does not invalidate the Atari guarantee. I had my 400 converted in the same day. Very good service. I cannot say the same for their Annual Subsciption to Analog, at the moment they are two issues

behind. I am still waiting for issues 9 and 10 which have been on sale locally for over two months. I am several issues missing on Analog and Antic, any ideas where back issues can be obtained?

With regard to tape problems, where you get a fault in loading, I have found that by leaving the tape in the position where you have Saved or Loaded a program causes the pinch wheel to put a kink in the tape which will cause a faulty load, so always rewind your tape and release all keys on the recorder.

Excellent Graphics on the Cricket Maths program. Continued success to the magazine.

H. W. Clark,
Barking, Essex

Dear Les,

In answer to your call on Memory boards, I purchased my 400 in August 1981 with 32K fitted from new from Maplin. This board, although reliable, did cause the left half of the TV screen to have vertical lines. The degree of nuisance varied from program to program. As the computer was new to this country at the time, I assume that the board came from the States. I have now replaced this board with a 48K one made by Calisto. This has got rid of the vertical line problem and gives me a sharp fault-free picture. The shop I purchased the board from is called Vision Store in Kingston-upon-Thames. The reason I went there was solely due to the fact that a friend had his machine upgraded there. I went to 48K because I have a feeling that the price of Disk Drives is going to come down to a level that I can afford. Back to the board. After a few days it suddenly would only show Memo Pad mode whether it had Basic in or not. As the shop is not very near to me I decided to open it up and take a look. I found that one of the two extra wires that are soldered onto the cartridge connector was adrift and the other one fell off soon after. I did a quick soldering job and all was well. I wonder how many other computers have had shoddy soldering jobs done?

John Shill,
Farnborough, Hants.

***From the rest of his letter it is obvious that John has some electronics knowledge and without this I would not advocate taking your Atari apart to check on faults. If you have problems ring the shop where you had an upgrade done and get them to fix it quickly. A good shop will help you. If you find delays in getting your machine back, complain. Several people have written to say that they still experience severe delays from Atari's new Service centres. If this is so complain directly to Atari in Slough and ring them two or three times a week until you get your machine back. If you sit back patiently, everyone will assume that you are happy to wait. A Company's reputation is built on Service and Atari took a step in the right direction in setting up their Service centres, but they must be told by you — the customers — if there are still delays and problems.*

Dear PAGE 6,

In First Steps you said that by pressing CTRL and 1 it stops the screen scrolling. This is true but it explains it very well in the Basic Reference Manual—page 14.

This must mean that you are saying the experts don't read their manuals.

Nicholas Pearson,
Selby, Yorks.

***Quite right, Nicholas! Bill Wilkinson who wrote the Atari Basic language actually admitted in his column in Compute! that he had his machine for over a year before someone pointed out the CTRL 1 feature!*

Please keep sending your letters on any subject, either in answer to queries raised by other readers or on matters that have not been covered before. Also send in any hints and tips that you feel might help other readers or amendments to any of the programs printed. Finally, we are running short of small Demo programs and any short programs demonstrating graphics or other functions would be appreciated.

Lunar V

Stan Ockers, Illinois, U.S.A.

With Player Missile Graphics it is possible to move images you create around the screen independent of what is displayed as background. This is done with very little calculation. Changing a single memory location will move the entire image horizontally while moving bytes up and down in memory will move the image vertically.

I've developed a set of machine language routines which can be called from Basic to assist in missile graphic movement. These are not necessarily the best and certainly not the only way of doing missile graphics, but I hope what I've come up with will help others in developing programs.

I'll cover only enough to get started in this article. I placed the routines in the unused portion of memory in page six and have reserved some locations at the top of page six. You often have to remember vertical and horizontal positions of players. Table 1 lists locations for this. Also listed are locations storing pointers to areas of memory used to hold player images. These have to be calculated because they depend on the size of memory in your machine.

	MISS	Plyr. 3	Plyr. 2	Plyr. 1	Plyr. 0
Horizontal	1788	1787	1786	1785	1784
Position	53252	53251	53250	53249	53248
Vertical Position	1783	1782	1781	1780	1779
High Byte Memory Vector	1778	1777	1776	1775	1774
Low Byte Memory Vector	1773	1772	1771	1770	1769

Perhaps the best way to explain what is going on is through an actual program. The listing is from a program called Lunar V. The machine language subroutines are poked into memory in lines 30-44. Line 36 contains a subroutine used to load zero page locations 00CB and 00CC with the start of memory assigned to player X. Players are numbered 0 to 4 with player 4 being missiles. At line 38 is a routine which places bytes representing player X into memory at the appropriate spot. It is called using the USR function in the form A=USR(1606,X,ADDR). ADDR is the decimal address where player image bytes are stored. The routine will keep loading bytes until a zero byte is found. It picks up the vertical position (increasing down from the top of the screen) from 1779,X. The load player routine does not erase what is already there. This is done by a routine poked in at line 44 and called by A=USR(1706,X).

Major routines move the player vertically. A=USR(1637,X) poked into memory by lines 40 and 41, moves him downscreen and A=USR(1673,X) in lines 42 and 43 move him upscreen. Traps are included to keep from roaming into another player's area of memory. These can also be used to limit the vertical motion of players. Change the 126 at 1678 (make it lower), or the 1 at 1683 (make it higher).

Setting pointers for player memory is done in line 50. These are for double line resolution meaning each byte will cover two scan lines on the TV. You could get smoother motion using single line resolution, but double line resolution is simpler for now. The 4 page gap (1K) between the end of player memory locations and the end of RAM is used by the operating system for display purposes, the amount used depends on the graphics mode.

Lines 60 and 63 poke data for images into memory. The images (in order) are the lander, the flame and the crater. Various portions of the flame are used depending on the thrust (see line 195). Images are stored in an unused portion of memory at the beginning of the missile graphics area. •

I believe that Lunar V was Stan Ocker's first program submitted to the A.C.E. Newsletter in June 1981. Stan has come a long way since then but I hope that this article and program will provide readers who do not understand yet about Vertical Blank Interrupts, with a better understanding of player missile graphics. See if you can improve the program, there is plenty of scope, and send in your revised efforts.

```
1 REM ****************************
2 REM *          LUNAR V          *
3 REM *             by            *
4 REM *        STAN OCKERS        *
5 REM * from ACE NEWSLETTER,EUGENE *
6 REM *    OREGON,   U.S.A.       *
7 REM ****************************
10 DIM M$(20):POKE 559,0
20 REM POKE MISSILE -GR.ROUTINES
30 FOR I=1594 TO 1720:READ A:POKE I,A:
NEXT I
36 DATA 170,189,233,6,133,203,189,238,
6,133,204,96
38 DATA 104,104,104,32,58,6,104,133,20
6,104,133,205,188,243,6,162,0,161,205,
201,0,240,7,145,203,230,205,200
39 DATA 208,243,96
40 DATA 104,104,104,32,58,6,188,243,6,
200,192,126,176,21,177,203,208,247,136
,177,203,240,6,200,145,203,136
41 DATA 208,245,200,145,203,254,243,6,
96
42 DATA 104,104,104,32,58,6,188,243,6,
192,1,240,19,208,1,200,177,203,240,6,1
36,145,203,200,208,245,136,145
43 DATA 203,222,243,6,96
44 DATA 104,104,104,32,58,6,160,0,152,
145,203,200,16,251,96
48 REM * VECTORS FOR PLAYER MEM *
50 A=PEEK(106)-8:POKE 54279,A:POKE 177
4,A+2:POKE 1775,A+2:POKE 1769,0:POKE 1
770,128:START=256*A
58 REM * POKE IMAGE DATA *
60 FOR I=START TO START+28:READ A:POKE
 I,A:NEXT I
62 DATA 8,60,126,195,126,60,24,126,165
,129,0,90,90,66,36,36,36,24,24,24,0,24
,60,126,255,126,60,24,0
98 REM * INITIALISE VARIABLES *
100 ALT=4500:FUEL=800:GRAV=5:THRUST=5:
FRACT=0.1:VEL=0:EMPTY=0:N=10:LN=11:POK
E 53257,0:POKE 559,34:GRAPHICS 17
102 TRAP 100
104 REM * MAIN LOOP STARTS HERE *
105 POKE 53275,2:POKE 77,0:IF N>1 THEN
 120
110 REM * DRAW MOUNTAINS IF N=1 *
111 RESTORE 118
112 FOR J=1 TO 5:READ X,Y,L,R:FOR I=0
TO L:POSITION X+I,Y-I:? #6;CHR$(143):N
EXT I:POSITION X+L,Y-L:? #6;CHR$(254)
114 FOR I=1 TO R:POSITION X+L,Y-L+I:?
#6;CHR$(252):NEXT I:NEXT J:FOR I=8 TO
11:POSITION I,22:? #6;CHR$(141)
116 NEXT I
118 DATA 0,17,3,4,6,16,4,5,13,13,5,1,1
,22,3,3,12,22,5,2
119 REM * ERASE PREV.STARS *
120 RESTORE 1050+LN
122 READ X,Y:IF X=0 THEN 126
124 POSITION X,Y:? #6;" ":GOTO 122
125 REM * DRAW NEW STARS *
126 RESTORE 1050+N
127 READ X,Y:IF X=0 THEN 132
129 POSITION X,Y:? #6;CHR$(170):GOTO 1
27
130 REM * INSTRUMENT LABELS *
132 POSITION 0,0:? #6;"ALT=":POSITION
12,0:? #6;"FUEL=":POSITION 0,23:? #6;"
VEL="
134 REM * INITIALISE MISSILE GRAPHICS
*
135 POKE 559,46:POKE 53277,3
138 REM * LANDER POS. AND COLOR *
140 POKE 53248,128:POKE 1779,10:POKE 7
04,200
148 REM * FLAME POS. AND COLOR *
150 POKE 53249,128:POKE 1780,21:POKE 7
05,68
188 REM * ERASE OLD - DRAW LANDER *
190 A=USR(1706,0):A=USR(1706,1):POKE 1
780,PEEK(1779)+11:A=USR(1606,0,START)
191 REM * SKIP FLAME 40% OF TIME *
192 IF RND(0)>0.6 THEN 200
195 FLAME=START+20-INT(THRUST):A=USR(1
606,1,FLAME)
198 REM * UPDATE VARIABLES *
200 ACCEL=THRUST-GRAV
220 VEL=VEL+FRACT*ACCEL
240 ALT=ALT+FRACT*VEL
250 REM * TEST FOR SURFACE *
260 IF ALT<0 THEN POSITION 5,0:? #6;"0
":GOTO 900
280 FUEL=FUEL-FRACT*THRUST
290 REM * TEST FOR FUEL GONE *
300 IF FUEL<0 THEN FUEL=0:EMPTY=1:THRU
ST=0
490 IF EMPTY=1 THEN 550
495 REM UPDAT THRUST WITH STICK *
500 S=STICK(0)
510 IF S=15 THEN THRUST=0
520 IF S=13 AND THRUST<9 THEN THRUST=T
HRUST+0.5
540 REM * UPDATE POSITION *
550 SOUND 1,25,4,THRUST:YPOS=(N*450-AL
T)/5+10:POKE 1779,YPOS:POKE 1780,YPOS+
11
590 REM * PRINT VARIABLES *
600 POSITION 5,0:? #6;INT(ALT);" ":POS
ITION 4,23:? #6;INT(VEL);" ":POSITION
17,0:? #6;INT(FUEL);" "
605 REM * TEST FOR NEW SCREEN *
610 IF YPOS>100 THEN LN=N:N=N-1:YPOS=1
0:GOTO 105
620 IF YPOS<10 THEN LN=N:N=N+1:YPOS=10
0:GOTO 105
690 REM * REDO MAIN LOOP *
700 GOTO 190
890 REM * TEST FOR LOSING *
900 SOUND 1,0,0,0:IF VEL<-10 THEN 950
901 REM * LANDED SAFELY *
902 A=USR(1706,1)
```

Lunar V continued

```
905 POSITION 0,2:M$="MISSION CONTROL:"
:GOSUB 1000:? #6;"":M$="LUNAR V HAS LA
NDED.":GOSUB 1000
910 M$="CONGRATULATIONS ON":GOSUB 1000
:M$="A PERFECT FLIGHT !":GOSUB 1000:GO
TO 980
948 REM * CRASHED *
950 A=USR(1706,0):A=USR(1706,1):A=USR(
1606,1,START+21):FOR J=1 TO 3:POKE 532
57,1:POKE 53257,3
952 SOUND 0,100,4,14:POKE 53249,120:PO
KE 53257,1:FOR I=1 TO 30:NEXT I:SOUND
1,140,4,14:POKE 53249,116
954 POKE 53257,3:FOR I=1 TO 30:NEXT I:
SOUND 0,0,0,0:SOUND 1,0,0,0:NEXT J:POK
E 705,6
955 POSITION 0,2:M$="MISSION CONTROL:"
:GOSUB 1000:? #6;"":M$="LUNAR V WENT O
UT OF":GOSUB 1000
960 M$="CONTROL AND DUG A":GOSUB 1000:
? #6;"CRATER ";INT(ABS(VEL)*3);" FEET"
:M$="INTO THE MOON'S":GOSUB 1000
970 M$="SURFACE.":GOSUB 1000
975 REM * TEST FOR START KEY *
980 IF PEEK(53279)=6 THEN POKE 559,0:P
OKE 53277,0:GOTO 100
990 GOTO 980
999 REM * MESSAGE SUBROUTINE *
1000 FOR I=1 TO LEN(M$)-1:? #6;M$(I,I)
;:SOUND 0,50,10,8:FOR J=1 TO 10:NEXT J
:SOUND 0,0,0,0:FOR J=1 TO 10:NEXT J
1010 NEXT I:? #6;M$(I,I):RETURN
1050 REM * DATA FOR STARS *
1051 DATA 1,4,7,11,16,5,0
1052 DATA 2,4,6,10,15,3,5,5,5,16,0
1054 DATA 8,3,12,7,18,18,2,1,16,2,0
1055 DATA 7,7,10,10,17,3,0
1056 DATA 4,2,7,18,17,4,13,15,0
1057 DATA 5,3,14,14,12,9,2,13,0
1058 DATA 1,2,18,4,13,13,11,1,5,15,0
1059 DATA 5,3,19,4,14,10,3,14,13,18,0
1060 DATA 5,2,18,7,9,16,1,7,16,13,0
1061 DATA 8,3,9,15,15,2,0
1062 DATA 2,2,9,9,19,4,0
1063 DATA 9,3,1,5,16,14,0,0
```

WHOOPS!... ERROR 17

Like all the quality magazines, we need a blunders corner sometimes which we will call ERROR 17 (look it up in your Manual!).

Only one error reported from Issue 3. In line 10005 of Cricket Maths the last statement should be TRAP 10000 NOT TRAP 100. You will need to use abbreviations to get it in.

User Groups/Contact

The User Group network is beginning to build up. See previous issues for details of User Groups in MERSEYSIDE, EDINBURGH, PRESTON and NORTH WALES. If you have formed a User Group or want to form one in your area, let us know and we will happily publish details. Once you have got a group running, keep in touch and let PAGE 6 know how you are faring.

LEA VALLEY ATARI USERS GROUP — No details of when or where they meet but get in touch with

MATTHEW TYDEMAN, VICE-PRESIDENT
LEA VALLEY ATARI USERS GROUP,
125 CADMORE LANE
CHESHUNT
HERTS.

NORWICH USERS GROUP — Following the mention in the last issue, Ken and Sherry Ward have got enough people together to form a User Group. Not only that, Ken has managed to produce a Newsletter—NUGGET—which looks quite promising. For more details get in touch with

KEN WARD
45 COLEBURN ROAD
LAKENHAM
NORWICH
Tel.: 0603 661149

Finally, a couple of people who are suffering from lack of time or problems in typing in all the listings in the magazines.

STEVE GUNN of 16 LEVERTON GREEN, CLIFTON ESTATE, NOTTINGHAM NG11 8BS, is finding that there is not enough time to type in everything and would like to swap disks or tapes of magazine listings.

K. DAY of 70 NIGHTINGALE ROAD, CARSHALTON, SURREY SM5 2EN, would like some help in getting programs from the American magazines to run, particularly 'STARSHOT' from a recent COMPUTE! Get in touch if you can help.

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ZAXXON

DATASOFT 16K CASS.

1 PLAYER 32K DISK

This is an adaptation of a popular 3-D arcade game for the Atari 400/800 computers. You are the pilot of a spacefighter craft that flies through a heavily defended space fortress in pursuit of the robot Zaxxon. You have to fly through gaps in walls and choose to shoot fuel dumps (which when hit refuels your own craft), tank guns, radar dishes, parked enemy fighters or avoid them. After your first pass through, you face enemy fighters flying in outer-space. Having survived you take on the fortress again, this time with high walls and force-fields. Low on fuel you have to shoot what fuel dumps you can and then position your craft at the right height to pass through the narrow gaps between the walls and force-fields. At the back of the fortress lies the Zaxxon robot with its deadly homing missile. All you need is six direct hits on Zaxxon to destroy it. Having done so, you have cycled through one complete phase of Zaxxon, ready to take on the next difficulty level.

The arcade game has a very heavily armed fortress, complete with missile silos, and buildings—these added features are missing on the home computer version, and instead of a 3-D dogfight in outer-space with enemy fighters, this is compromised into a 2-D battle. In the arcade, Zaxxon is a huge fearsome robot, but it has shrunk in size for the Atari computer. The 3-D flying difficulty is present as in the arcade, but the fortress is somewhat barren in comparison—this will disappoint arcade-followers of the game who will keep going back to the arcade machines to play this visually stunning game. There is also the De-luxe version in the arcades with its cute dragon to fight.

Datasoft has not produced a faithful adaptation of the Sega game and this will disappoint many unaware buyers of the game—it is still a reasonable playable 3-D game for the Atari and will amaze those who have not heard of Zaxxon before.

QIX

ATARI 16K ROM

1 PLAYER

This straight adaptation of the arcade game is bound to please those wanting a game that is so very different from the very many space shoot-em-up games. The object of the game is to draw boxes covering 75% of the screen and any percentage over 75 is awarded x 1000 points. You start off with three markers and move on to a new screen when 75% or more is covered.

Your marker can draw lines but must avoid the Qix (a helix that flies in space) while drawing—if it touches an unfinished line or you, you lose a marker. Along with the Qix you have to avoid two sparx—who travel along the lines. Simply go out and draw something when they are approaching. The sparx multiply beyond a certain time limit.

Normally you have fast draw (the boxes are coloured blue) and can choose slow draw by keeping the trigger pressed while drawing (the boxes are coloured brown) for double points. Hesitate in your drawing and you start off a fuse at the beginning of your line. To stop it, keep moving. Draw yourself a spiral and you end up in a death trap.

Once you have filled up two screens, you face two Qix—separate them somehow with a line and you start again with points doubled. Separate the two Qix again and the points are trebled, and so on.

The graphics of the game are very simple but the sounds are pleasing and unique—just like the arcade. Because you are free to draw any rectangular shapes that you think might work, this is a game of strategy and planning. After a while you will find that filling in 90% of the screen is not too difficult but 98% or 99% takes some planning and luck.

Merlin's Magic Square

Steve Hutton, West Midlands

Merlin's Magic square is an entertaining little program to test your logic skills. Instructions for play are included on the screen.

The program listing contains plenty of REMarks for you to follow. Pay particular attention to the inverse spaces required in lines 350 to 370. If you want to change the colour of the screen, alter the SETCOLOR statement in line 30. Also adding SETCOLOR 1,0,14 will brighten up the display.

```
10 REM ******************************
11 REM *   MERLIN'S MAGIC SQUARE    *
12 REM *       BY STEVE HUTTON      *
13 REM *          13/1/83           *
14 REM ******************************
15 POKE 764,255
20 REM *** CLEAR SCREEN AND INHIBIT
THE CURSER
30 ? CHR$(125):POKE 752,1:SETCOLOR 2,2
,1:CLR
40 REM *** PRINT TITLE, INSTRUCTIONS
AND COUNTER
50 POSITION 8,3:? "MERLIN'S MAGIC SQUA
RE"
60 POSITION 3,8:? "PRESS 1-9":POSITION
 2,9:? "TO MAKE THE":POSITION 4,10:? "
NUMBERS"
70 POSITION 4,11:? "LIGHT UP":POSITION
 3,12:? "OR GO OUT"
80 POSITION 27,8:? "THE OBJECT":POSITI
ON 26,9:? "OF THE GAME":POSITION 26,10
:? "IS TO LIGHT"
90 POSITION 27,11:? "UP ALL THE":POSIT
ION 27,12:? "NUMBERS IN"
100 POSITION 26,13:? "AS FEW MOVES":PO
SITION 26,14:? "AS POSSIBLE":POSITION
6,18:? "NUMBER OF MOVES TAKEN = "
110 REM *** SET UP RANDOM SQUARE
120 Z=0:DIM SQ(9)
130 FOR Q=1 TO 9
140 Z=Z+1
150 IF Z=1 THEN A=15:B=7:C=8:D=9
160 IF Z=2 THEN A=18
170 IF Z=3 THEN A=21
180 IF Z=4 THEN A=15:B=10:C=11:D=12
190 IF Z=5 THEN A=18
200 IF Z=6 THEN A=21
210 IF Z=7 THEN A=15:B=13:C=14:D=15
220 IF Z=8 THEN A=18
230 IF Z=9 THEN A=21
240 Y=INT(RND(0)*2):SQ(Q)=Y
250 IF Y=0 THEN GOSUB 300
260 IF Y=1 THEN GOSUB 350
270 NEXT Q
275 SOUND 0,60,10,0
280 GOTO 390
290 REM * SET UP RND SQR(OFF=0)
300 POSITION A,B:? CHR$(137);CHR$(149)
;CHR$(143)
310 POSITION A,C:? CHR$(25);Z;CHR$(153
)
320 POSITION A,D:? CHR$(139);CHR$(21);
CHR$(140)
330 RETURN
340 REM * SET UP RND SQR(ON=1)
350 POSITION A,B:? "   ":REM INVERSE S
PACES
360 POSITION A,C:? " ";CHR$(176+Z);" "
:REM INVERSE SPACES
370 POSITION A,D:? "   ":REM INVERSE S
PACES
380 RETURN
382 GOSUB 650
385 REM *** THIS SECTION DEALS WITH
THE KEYS 1-9
390 N1=31:N2=30:N3=26:N4=24:N5=29:N6=2
7:N7=51:N8=53:N9=48:N10=0
400 POSITION 30,18:? N10
410 P=PEEK(764):IF P=255 THEN 410
420 IF P=N1 THEN N10=N10+1:GOSUB 997
430 IF P=N2 THEN N10=N10+1:GOSUB 1998
440 IF P=N3 THEN N10=N10+1:GOSUB 2997
450 IF P=N4 THEN N10=N10+1:GOSUB 3998
460 IF P=N5 THEN N10=N10+1:GOSUB 4996
470 IF P=N6 THEN N10=N10+1:GOSUB 5998
480 IF P=N7 THEN N10=N10+1:GOSUB 6997
490 IF P=N8 THEN N10=N10+1:GOSUB 7998
500 IF P=N9 THEN N10=N10+1:GOSUB 8997
510 POKE 764,255:GOSUB 650
520 IF N10=3 THEN GOSUB 540
530 GOTO 400
540 FOR W=8 TO 12
550 FOR U=2 TO 12
560 POSITION U,W:? " "
570 NEXT U
580 NEXT W
590 FOR W=8 TO 14
600 FOR U=26 TO 37
610 POSITION U,W:? " "
620 NEXT U
630 NEXT W
640 RETURN
650 IF SQ(1)=1 AND SQ(2)=1 AND SQ(3)=1
 AND SQ(4)=1 AND SQ(5)=1 THEN GOSUB 67
0
660 RETURN
670 IF SQ(6)=1 AND SQ(7)=1 AND SQ(8)=1
 AND SQ(9)=1 THEN GOTO 685
680 RETURN
685 POSITION 30,18:? N10
690 FOR I=1 TO 4
700 FOR H=200 TO 150 STEP -1
710 SOUND 0,H,10,8
720 NEXT H
730 NEXT I
740 SOUND 0,H,10,0
750 GOSUB 540
760 POSITION 3,9:? "SUCCESS!"
770 POSITION 4,11:? "WHY NOT"
780 POSITION 5,12:? "PLAY"
790 POSITION 4,13:? "AGAIN ?"
800 POSITION 27,9:? "PRESS ANY"
820 POSITION 28,10:? "KEY TO"
830 POSITION 28,11:? "START A"
840 POSITION 27,12:? "NEW GAME."
850 P=PEEK(764):IF P=255 THEN 850
860 IF P<>255 THEN GOTO 15
996 REM *** KEY NUMBER 1 PRESSED
997 GOSUB 2000
998 GOSUB 4000
999 GOSUB 5000
1000 SOUND 0,162,10,8
1010 A=15:B=7:C=8:D=9:Z=1
1020 IF SQ(1)=0 THEN GOSUB 350
1030 IF SQ(1)=1 THEN GOSUB 300
1040 IF SQ(1)=0 THEN SQ(1)=1:GOTO 1060
1050 IF SQ(1)=1 THEN SQ(1)=0
1060 SOUND 0,162,10,0
1070 RETURN
1997 REM *** KEY NUMBER 2 PRESSED
1998 GOSUB 1000
1999 GOSUB 3000
2000 SOUND 0,144,10,8
2010 A=18:B=7:C=8:D=9:Z=2
2020 IF SQ(2)=0 THEN GOSUB 350
2030 IF SQ(2)=1 THEN GOSUB 300
2040 IF SQ(2)=0 THEN SQ(2)=1:GOTO 2060
2050 IF SQ(2)=1 THEN SQ(2)=0
2060 SOUND 0,144,10,0
2070 RETURN
2996 REM *** KEY NUMBER 3 PRESSED
2997 GOSUB 2000
2998 GOSUB 5000
2999 GOSUB 6000
```

GOTO PAGE 27

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Memory Mapped Screens

Phil Griffin, West Midlands

Screen displays are normally set up on an Atari computer by using the PRINT, PLOT, DRAWTO and FILL instructions. This may be adequate in most situations but at some stage you may find that the cursor is out of range, for example if you are using redefined display lists, or that you need extra speed of execution for simple animation sequences. These problems can be overcome by taking advantage of the Atari's memory mapped screen.

In each Graphics mode the screen is split into memory locations which are directly addressable by the POKE and PEEK instructions. The number of locations on the screen is dependent on the Graphics mode in use and each location is assigned a memory address which may vary according to the Graphics mode selected.

The lowest screen memory location is in the top left corner of the screen and its address is contained in the Operating System at locations 88 and 89. The program below will give the start address of the screen memory locations for any Graphics mode represented by 'n'. Simply replace 'n' by the number of the Graphics mode you wish to use.

```
10 GRAPHICS n:TLn=PEEK(88)+256*PEEK(89)
```

Subsequent screen locations are numbered sequentially from left to right across the screen in rows. The contents of locations 88 and 89 alter depending on which Graphics mode is specified and also depending on the amount of RAM that the computer has installed. For this reason it's best to assign the first screen location to a variable and relate any other screen locations to this, e.g. TL2,TL2+20,TL2+150 etc.

Table 1 shows the total number of screen memory locations for each Graphics mode available from the Operating System. Graphics modes 1 to 8 inclusive have an optional text window which can be suppressed by adding 16 to the Graphics mode number selected. The resultant total number of screen memory locations for each mode is also shown in the table.

Any whole number value between 0 and 255 can be put into a screen memory location by means of the POKE instruction. Precisely what you get on the screen after POKEing a location depends on the Graphics mode(s) in use. Graphics Modes 0, 1 & 2 give characters from the internal set, whilst the remaining modes give sequences of coloured pixels. The Graphics Modes can be grouped as follows:

GRAPHICS MODE	DISPLAY
0, 1 & 2	Internal Character Set
3, 5 & 7	Three colour Graphics + background
4, 6 & 8	Single colour Graphics + background
9, 10 & 11	Multi-colour/Luminance Graphics (of limited value in this context)

Graphics Mode	Screen Memory Locations Per Mode Line	Number of Mode Lines With Text Window	Number of Mode Lines Without Text Window	Total Number of Screen Memory Locations With Text Window	Total Number of Screen Memory Locations Without Text Window
0	40	N/A	24	N/A	960
1	20	20	24	400	480
2	20	10	12	200	240
3	10	20	24	200	240
4	10	40	48	400	480
5	20	40	48	800	960
6	20	80	96	1600	1920
7	40	80	96	3200	3840
8	40	160	192	6400	7680
9	40	N/A	192	N/A	7680
10	40	N/A	192	N/A	7680
11	40	N/A	192	N/A	7680

TABLE 1

NOTE: The Text Window consists of 4 mode lines of Graphics 0. The start and finish locations for the Text Window will always be TL0+800 and TL0+959 respectively.

GRAPHICS MODES 0, 1 & 2

These are the modes which utilise the standard character set within the computer's Operating System and each screen memory location is equivalent in size to that required to display a character.

Graphics Mode 0

This mode gives a single colour character set and the full range of characters available can be shown by the following short program:

```
10 GRAPHICS 0:TL0=PEEK(88)+256*PEEK(89
):POKE 752,1
20 FOR I=0 TO 255:POKE TL0+I,I:NEXT I
30 GOTO 30
```

The value to be poked for each character is the same as the number shown in the Table 9-6 (Page 55) of the Basic Reference Manual (supplied with the Basic Language Cartridge). To obtain the Inverse Video of a character add 128 to the value shown in the table.

Graphics Modes 1 & 2

These Modes give the option of the normal character set in a choice of four colours. Inverse video characters are not available in these Modes and in order to obtain characters 64 to 127 in Table 9-6 a POKE 756,226 instruction must be used. The range of characters available can be displayed by substituting GRAPHICS 1 for GRAPHICS 0 (line 10) and TL1 for TL0 (lines 10 and 20) in the program above. Characters 64 to 127 can be shown by adding the following line to the program:

```
15 POKE 756,226
```

DEMONSTRATION PROGRAM

The accompanying short program 'SPIDER' shows how a character can be moved around the screen with a joystick by POKEing values to screen locations. The program is only a demonstration but, with a little bit of ingenuity, it could be used to form the basis of a game.

```
1 REM ***********SPIDER*************
2 REM * MOVEMENT BY POKEING SCREEN *
3 REM * LOCATIONS: USE JOYSTICK IN *
4 REM *          PORT NO 1         *
5 REM ******************************
10 POKE 752,1:? CHR$(125):TL0=PEEK(88)
+256*PEEK(89):SETCOLOR 2,3,6:SETCOLOR
1,0,0
20 A=TL0+219:CHK=TL0+200:B=TL0
30 POKE B,0:POKE A,10:B=A
40 S=STICK(0):IF S=11 THEN A=A-1:IF A<
CHK THEN A=CHK
50 IF S=7 THEN A=A+1:IF A>CHK+39 THEN
A=CHK+39
60 IF S=14 THEN A=A-40:CHK=CHK-40:IF C
HK<TL0 THEN CHK=TL0:A=A+40
70 IF S=13 THEN A=A+40:CHK=CHK+40:IF C
HK>TL0+920 THEN CHK=CHK-40:A=A-40
80 IF S=15 THEN 40
90 GOTO 30
```

In the next issue of PAGE 6, I'll deal with Graphics Modes 3 to 8 and demonstrate some other effects which can be generated with a memory mapped screen. •

PRICE INCREASE

You will have noticed that the cover price of PAGE 6 has been increased to 75p. Unfortunately this has been necessary as it was becoming obvious that the magazine could not survive much longer at the old price. The choice was simple—increase the subscription and cover price or stop publishing the magazine. From all of your letters I am sure that almost everybody would have been disappointed if they could no longer read PAGE 6 and I hope therefore that you will continue to support the magazine at the new price. Think what you get—a whole magazine devoted to Atari for the same price (or less) than you pay for a glossy magazine with only one Atari program or article. The way is open now—with your help and contributions—to get bigger and better. Tell your friends.

Software Reviews

XENON RAID by English Software Company. Space action game with lots of player-missiles over a stationary but well-conceived background. Docking sequences after you fight off each wave. Fairly difficult. 32K cassette.

A.C.E. THE ATARI CASSETTE ENHANCER. Sounds almost too good to be true. Allows you to name cassette-saved programs and then search through the tape to load the program of your choice. Verifies saved programs!!! Renumbers program. Automatic line numbering plus much more. All this at £7.95! Definitely a full review in the next issue. If it does all it claims then this could be the one program that no cassette owner should be without. •

Basic . . .

David Harry, West Midlands

Basic programs, which are all I can write, sometimes run more slowly than I would like, so I try to incorporate any time-saving devices I can. Often there is more than one way to achieve the same effect—for example, GR.0 ? "↰" and ? CHR$(125) all clear the screen. This simple timing routine will enable you to find out which of the routines you can use is faster and whether there is any saving or penalty in memory usage. It uses a FOR–NEXT loop to execute your piece of code 1000 times but if that is too long, change the value of R in line 3000.

```
1 REM ***          IMPORTANT          ***
2 REM * BEFORE TYPING IN THE LISTING *
3 REM *          TYPE FRE(0)          *
4 REM *  WITH DOS BOOTED IF YOU ARE   *
5 REM * USING DISK.THE VALUE RETURNED*
6 REM *  SHOULD BE USED AS THE VALUE *
7 REM *       FOR M1 IN LINE 1000     *
10 GOTO 2000
15 FOR REP=1 TO R
20 REM USE DUMMY LINES HERE - SEE TEXT
21 REM
990 NEXT REP
1000 X=127:M1=31141
1010 Y=PEEK(20)+256*PEEK(19)+256*256*P
EEK(18):Z=(Y-X)/50
1020 M2=FRE(0):M=M1-M2
1030 ? :? :? "TIME TAKEN WAS ";Z;" SEC
S":? "TIME PER LOOP = ";Z/R;" SECS":?
1040 ? "MEMORY USED IS ";M;" BYTES"
1050 ? "PLEASE ALTER PROGRAM BY ENTERI
NG ";:IF X=0 THEN ? :? :? "1000 X=";Y;
":M1=";M2:? :? "AND ENTERING ";
1070 IF X>0 THEN ? " THE NEXT ";
1090 ? "ROUTINE FOR TEST IN PLACE OF -
 ":LIST 20,989
1100 ? :? "PRESS 'BREAK' TO STOP BUZZE
R"
1110 ? CHR$(253);:FOR REP=1 TO 500:NEX
T REP:GOTO 1110
2000 REM SET UP MATRICES AND STRINGS H
ERE
3000 R=1000
3010 ? CHR$(125):? :? ,"TIMIMG ROUTINE
":? :? ,"by David Harry":? :? "LOOP NO
W RUNNING"
3020 POKE 20,0:POKE 19,0:POKE 18,0:GOT
O 15
```

The first RUN is a setting up run to isolate the effects of the program itself. Firstly enter a number of REM lines from line 20 onwards equivalent to the number of lines in the routine you are going to test as you are not testing the time taken to read line numbers. Next DIMension and initialise any strings or arrays from line 2000 on. Now RUN the program for the first time.

When the program asks you to change Line 1000, use the cursor up, enter the new line and enter your first routine for testing, starting from line 20. RUN the program and record the time and memory readings. Now change the routine to the one you want to compare and RUN again. Note the new readings . . . and so on.

. . . Timing

I originally wrote the routine to help with a program which used one long string to contain names and data for several individuals. Each name was allocated a 20 character section of string with blank characters (CHR$(32)) being used to extend names to the required length. This meant that where I wished the program to ask a question involving an individual's name, there was a variable length space before the next word in the question. One way round this would have been to use a FOR–NEXT loop to print the name one letter at a time, stopping at an end of name flag such as '*'. This seemed a little clumsy and slow. What I wanted was a character that would neither print anything on the screen nor move the cursor on. I found five: CHR$(158)—CLEAR TAB, CHR$(159)—SET TAB, CHR$(253)—SOUND BUZZER, CHR$(254)—DELETE CHARACTER, CHR$(255)—INSERT SPACE. The buzzer was obviously out—too noisy! Inserting or deleting characters would involve moving a number of characters (all blank) along the line which looked time consuming. However, it was still worth testing.

I first of all entered line 2000 DIM NAME$(20) :NAME$="ERMINTRUDE   ". This

has ten letters and ten spaces. Then at line 20 ? NAME$;. Having RUN the program and entered line 1000 X=2728:M1=12370,˙ I substituted CHR$(157) for each blank and re-ran. When I had timed each of the four characters I ran the FOR–NEXT loop with an end of name flag and "ERMINTRUDE" with no subsequent blanks for good measure. The initial run of 1000 repetitions took 54.56 secs. The other times were

CHR$	TIME	BYTES
158 Clear Tab	–14.00 sec	0
159 Set Tab	–14.18 sec	0
254 Delete Char	137.58 sec	0
255 Insert Char	140.80 sec	0
FOR–NEXT loop	101.00 sec	76
"ERMINTRUDE"	–26.00 sec	–10

The saving in times, which came as a complete surprise to me, can only partly be explained by the extra lines and scrolling involved by printing the blanks. Ten CHR$(158) still print 0.005 seconds faster than ten CHR$(32). What surprising facts can you come up with? •

Grab an Apple

Jamie Athas and Garry Francis, New South Wales, Australia

This game is designed in ANTIC mode 4, a character mode which allows up to four colours to be displayed within the same character. Each character is set up in a 4 x 8 grid giving a total screen resolution of 160 across by 192 down. To use ANTIC mode 4 it is basically a matter of changing a Graphics 0 display list, then redefining the character set. You are welcome to experiment with the techniques we have used. The game was originally in Graphics 5 but ANTIC 4 increases its visual impact tenfold.

HOW TO PLAY

This is a game where you control a giant lengthening caterpillar, and have to eat the apple. The quicker you eat the apple, the more points you get, but if you take too long, it will disappear to a new location and you will lose five points. If you run over yourself or hit the wall, you lose a life. You have three lives per game. Every time you eat an apple, the caterpillar is 'cut up' and your speed increases by 1 k/mh.

PROGRAM NOTES

The concept behind this game is a familiar one, but don't let that fool you. This game is totally original.

When the program begins, a title page is scrolled up the screen. This is for visual impact only and serves no useful purpose, however anyone wishing to examine the code will find it quite interesting. Firstly let me assure you that it is NOT genuine scrolling, but display list manipulation. It works by writing your own display list (lines 1010 to 1030) consisting of a screenful of blank mode lines and a few GRAPHICS 2 lines which begin at the bottom of the screen. (This is cheating the system and I suggest that you avoid such things unless you know what you are doing.) The number of blank mode lines is gradually reduced using the simple FOR–NEXT loop in line 1060, so that the GRAPHICS 2 lines slowly creep up the screen. The techinque is crude, but it works. You'll notice a certain degree of jerkiness, as the movements are not synchronised with the vertical blank. You can experiment with the speed by changing the delay (i.e. FOR W=1 TO 15:NEXT W) in line 1060.

When the scrolling is finished, the character set is copied from ROM to RAM (line 1070) using the machine language routine out of Stan Ockers Doggies, then seven of the special characters are redefined (line 1100). I was going to draw up some pretty pictures to show how this is done in ANTIC mode 4 but unfortunately I ran out of time.

The screen is then cleared and another custom display list is created (line 1160), this time for a screenful of ANTIC mode 4 with 3 lines of Graphics 0 at the bottom for scoring information. If you want an entire screen of ANTIC mode 4 in your own programs, then change the loop to read FOR I=DL+6 TO DL+28. This completes the initialisation.

If you care to draw a flowchart of the main program (lines 20 to 370) you'll notice that it follows a very efficient and logical flow. Beginners should take particular note of this. It is something that you should always strive for to achieve peak efficiency without losing readability. This is something I can never stress too much. Too many programs are written with a spaghetti-like structure! As a result, they run slow and use up about twice the memory necessary. In Grab an Apple, the effort has paid off. Speed is no longer a problem despite the delays for sounds. In fact, I had to insert a lengthy delay loop (line 240) to slow the game down. The game becomes more difficult as it progresses by reducing the length of this loop every time you eat an apple. You'll also notice a certain 'beat' to the program, which starts the adrenalin flowing as the pace increases. (This was the secret to Space Invaders success.) You have to eat 50 apples in one game to reach the fastest speed. I certainly can't do it! If you want to see the game at maximum speed, change the loop to read FOR I=1 TO 1:NEXT I.

Anyway, I hope you enjoy playing Grab an Apple as much as Jamie and I did writing it. ➧

This article and program originally appeared in INSIDE INFO, the newsletter of Atari Computer Enthusiasts (N.S.W.)—Australia.

```
1 REM ******************************
2 REM *        GRAB AN APPLE        *
3 REM * Jamie Athas & Garry Francis *
4 REM *     First published by      *
5 REM * Atari Computer Enthusiasts  *
6 REM * New South Wales - Australia *
7 REM ******************************
9 TRAP 2000
10 GOSUB 1000
20 LIVES=3:SPEED=1:SCORE=0
30 ? CHR$(125):COLOR 35:PLOT 38,0:DRAW
TO 38,20:DRAWTO 1,20:DRAWTO 1,0:DRAWTO
 39,0
40 HX=4:HY=3:DX=1:DY=0:HEAD=166
50 POSITION 4,21:? "LIVES: ";LIVES:POS
ITION 27,21:? "COUNTDOWN"
60 POSITION 4,22:? "SPEED: ";SPEED;" k
m/h"
70 POSITION 4,23:? "SCORE: ";:COLOR HE
AD:PLOT HX,HY
80 POSITION 11,23:? SCORE;" ";:COUNT=5
0
90 COLOR 32:FOR I=1 TO 2
100 Z=INT(36*RND(I))+2:IF Z=HX THEN 10
0
110 PLOT Z,2:DRAWTO Z,19:NEXT I:FOR I=
1 TO 2
120 Z=INT(18*RND(I))+2:IF Z=HY THEN 12
0
130 PLOT 2,Z:DRAWTO 37,Z:NEXT I
140 AX=INT(36*RND(I))+2:AY=INT(18*RND(
I))+2
150 LOCATE AX,AY,Z:IF Z<>32 THEN 140
160 COLOR 34:PLOT AX,AY:FOR I=10 TO 0
STEP -0.5:SOUND 0,100,10,I:NEXT I:SOUN
D 0,0,0,0
170 POSITION 31,22:? COUNT;" ":BX=HX:B
Y=HY:ST=STICK(0):IF ST=15 THEN 220
180 POKE 77,0:IF ST=14 THEN DX=0:DY=-1
:HEAD=164
190 IF ST=13 THEN DX=0:DY=1:HEAD=165
200 IF ST=7 THEN DX=1:DY=0:HEAD=166
210 IF ST=11 THEN DX=-1:DY=0:HEAD=167
220 HX=HX+DX:HY=HY+DY:LOCATE HX,HY,Z:S
OUND 0,100,12,4:COLOR 161:PLOT BX,BY:C
OLOR HEAD:PLOT HX,HY:SOUND 0,0,0,0
230 IF Z<>32 THEN 260
240 COUNT=COUNT-1:IF COUNT THEN FOR I=
1 TO 51-SPEED:NEXT I:GOTO 170
250 COLOR 32:PLOT AX,AY:SCORE=SCORE-5:
GOTO 80
260 IF Z<>34 THEN 300
270 FOR I=1 TO 50:SOUND 0,I,8,8:NEXT I
:SOUND 0,0,0,0
280 SCORE=SCORE+COUNT:SPEED=SPEED+1:IF
 SPEED>50 THEN SPEED=50
290 POSITION 11,22:? SPEED;" K/mh":GOT
O 80
300 FOR I=5 TO 255 STEP 10:SOUND 0,I,1
0,8:NEXT I:SOUND 0,0,0,0
310 LIVES=LIVES-1:IF LIVES THEN 30
320 POSITION 0,21:? CHR$(156);CHR$(156
);CHR$(156):IF SCORE>HI THEN HI=SCORE
330 POSITION 11,21:? "YOUR SCORE: ";SC
ORE:POSITION 11,22:? "HIGH SCORE: ";HI
340 ? "     DO YOU WANT ANOTHER GAME (Y
/N)?";
350 GET #1,Z:IF Z=ASC("Y") THEN 20
360 IF Z<>ASC("N") THEN 350
370 CLOSE #1:POKE 82,2:POKE 106,START+
8:GRAPHICS 0:END
1000 START=PEEK(106)-8:POKE 106,START-
1
1010 GRAPHICS 4:POKE 559,0:POKE 708,70
:POKE 709,108:POKE 710,14:POKE 711,54:
DL=PEEK(560)+256*PEEK(561)
1020 FOR I=DL+3 TO DL+26:POKE I,112:NE
XT I:POKE DL+27,71:POKE DL+28,PEEK(88)
:POKE DL+29,PEEK(89)
1030 FOR I=DL+30 TO DL+33:POKE I,7:NEX
T I:POKE DL+34,65:POKE DL+35,PEEK(560)
:POKE DL+36,PEEK(561):POKE 87,2
1040 POSITION 4,0:? #6;"JAMIE ATHAS":P
OSITION 1,1:? #6;"and garry francis"
1049 REM NEXT LINE IN INVERSE
1050 POSITION 6,2:? #6;"PRESENT":POSIT
ION 3,4:? #6;"grab an apple":POKE 559,
34
1060 FOR I=96 TO 0 STEP -16:FOR J=DL+3
 TO DL+26:POKE J,I:FOR W=1 TO 15:NEXT
W:NEXT J:NEXT I
1070 DIM ML$(32):FOR I=1 TO 32:READ A:
ML$(I)=CHR$(A):NEXT I:CHSET=256*START:
X=USR(ADR(ML$),57344,CHSET)
1080 DATA 104,104,133,204,104,133,203,
104,133,206,104,133,205,162,4
1090 DATA 160,0,177,203,145,205,136,20
8,249,230,204,230,206,202,208,240,96
1100 FOR I=CHSET+8 TO CHSET+63:READ A:
POKE I,A:NEXT I
1110 DATA 60,255,252,63,255,255,255,60
,10,8,20,85,85,85,85,20,239,239,239,17
0,254,254,254,170
1120 DATA 60,60,190,190,255,255,255,25
5,255,255,255,255,190,190,60,60
1130 DATA 248,248,255,255,255,255,248,
248,47,47,255,255,255,255,47,47
1140 GRAPHICS 0:POKE 559,0:POKE 16,64:
POKE 53774,64:POKE 82,0:POKE 83,39:POK
E 752,1
1150 POKE 708,54:POKE 709,188:POKE 710
,246:POKE 711,90:POKE 756,START
1160 DL1160 DL=PEEK(560)+256*PEEK(561)
:POKE DL+3,68:FOR I=DL+6 TO DL+25:POKE
 I,4:NEXT I
1170 OPEN #1,4,0,"K:":HI=0:POKE 559,34
:RETURN
2000 POKE 559,34:GRAPHICS 0
2010 ? "ERROR ";PEEK(195);" IN FOLLOWI
NG LINE":LIST PEEK(186)+256*PEEK(187)
```

SOFTWARE REVIEWS

STONE OF SISYPHUS

ADVENTURE INTERNATIONAL 48K DISK

1 PLAYER

Stone of Sisyphus has been advertised for some time in the American magazines with gory colour pictures inviting you to 'come into our dungeon'. The Atari version promises full colour graphics on two action-packed disks. For once it's all true! Stone of Sisyphus is true Dungeons and Dragons for your Atari—well maybe not quite so complex, being based more on the simpler Tunnels and Trolls but nevertheless good value for all Adventurers.

You start by creating your character, or rather having one created for you, but you can reject as many characters as you wish. Rather a pity this as you do not have to exercise any judgment, just keep ploughing through and sooner or later you will come up with a good one. Then you go on to the provisions store (no choice) and the armoury where you can purchase any of 80 different weapons and 26 types of armour. When you have equipped yourself it's time to venture into the dungeon.

I won't spoil the fun by telling you what you will find in the dungeon but I will say that the full colour graphics are all there and done very nicely—much better than the Scott Adams Graphic Adventure series. Colours are used well to depict the type of location you find yourself in, from dimly-lit passageways to brightly-lit rooms. There are puzzles to solve, treasures to find and collect and monsters to do battle with. Every scene is well-illustrated and for once the graphics do add a lot to the atmosphere. If you are a D & D afficionado, you might find a few things to complain about but remember that D & D is an immensely complex subject and to pack a dungeon onto a floppy disk and get good graphics is quite some feat.

The disks save data as you progress and are updated each time you play. You can save characters for another journey and the disk records how many characters have ventured into the dungeon as well as the mortality rate. Stone of Sisyphus is one of three adventures in the Maces & Magic series by Chameleon Software but the others have not yet been converted to the Atari. I look forward to seeing them when they become available but in the meantime there are many hours of enjoyment to be had from Stone of Sisyphus. Thoroughly recommended.

TRIAD

ADVENTURE INTERNATIONAL 48K DISK

1/2 PLAYERS

Brilliant! A totally original arcade style game which combines the simplicity of noughts and crosses with nine different arcade games. A winner all the way.

The overriding objective of the game is simple noughts and crosses—nothing more—but to get your cross in the box you have to play a complete arcade game chosen from one of the nine available. Get killed and a nought goes in the box instead. Three noughts and you lose. Three crosses and you go on to the next level. What makes Triad so good however are the superb graphics of each game and the fact that it is not just a shoot-em-up game, for you have to think about each game at each level to figure out just how you kill off the nasties. Let's take you through a game. You start with a noughts and crosses board with a 'nasty' in each of the squares. As you press the trigger these are scrambled to give you a random playboard and you choose where to put your cross by moving a large window cursor with the joystick. Press the trigger again and you are into the game you have chosen. As I said earlier, there are nine games and they are all different. Happy/sad faces, bug-eyed monsters, butterflies, chess pieces, spiders, arrows, hornets, flying saucers and bats are your adversaries. Each one requires a different technique. As you progress through the levels—by winning at noughts and crosses—the screen gets more and more crowded and the action faster. The graphics stay superb throughout.

There are one or two player options and you can use joysticks, paddles or keys. The review copy was hot off the press and I did not get an instruction booklet so there may be even more

in there. I couldn't figure out how you get the two player option but the Adventure International catalogue says it's there. Triad should be available by the time you read this and if you have 48K and Disk get a look, it really is a unique game. If someone could pack Triad into 16K on cassette then I am sure it would be the number one seller for some time, but I fear it can't be done. Definitely one to make the upgrade and disk drive worthwhile though.

THE SEARCH

CS SOFTWARE 16K CASS.

1 PLAYER 32K DISK.

You don't get many Graphic Adventures for 16K machices, so The Search from CS Software was of considerable interest. First thoughts were that the 'graphic' part would consist of ordinary characters poked onto a Graphics 0 screen with the rest left to imagination but that isn't what The Search is like. This becomes apparent as soon as the game is loaded. Colour is used quite extensively and to good effect to represent your surroundings and the various characters you will meet and objects you will find. There are no high-resolution graphics but then you can't expect that in 16K and without a disk drive.

The game is a Fantasy Adventure where your quest is to find a magic ring and return it to the blue castle from whence you start. Included in the package is a letter from the High Wizard Moradoc—a nice touch this—giving you the benefit of his knowledge of what you might find on your travels. There are orbs for markers, mushrooms to eat for strengh, a magic carpet to whisk you to other locations, treasure chests and more specific items like keys, a chalice and the Great Sword. The Inhabitants of the land are an untrustworthy bunch and keep popping up at unexpected moments. You must decide whether to fight or bribe them or try and talk. Only your intuition will tell you the best course. There are over 100 screens for you to explore and various locations such as the West Woods, Middle Marsh and the Great Dark Forest. Overall the game is quite pleasing though seemingly difficult to succeed at. There are one or two things which are frustrating such as the slow speed your character moves and the fact that you have no control in the battles which seem to be decided somewhat arbitrarily. The game would certainly be improved if your character actually 'walked' about the screen as you moved him and if you could get more involved in the battles.

There must be many owners with 16K machines who have not tried an Adventure for they are few and far between unless you have at least 32K. For these people The Search might be an ideal start although seasoned Adventurers would almost certainly find it too simplistic. The Search is available by Mail Order from CS Software at £14.95 including postage or from selected retailers.

SHAFT RAIDER

PROGRAM ONE INC. 32K CASS.

1 PLAYER 32K DISK

What do you do when you want to write a game that is better than Airstrike, Protector and Caverns of Mars? Easy, you write one that combines the best of all three and add some improvements. That is basically what Shaft Raider is.

You start with five ships in a horizontally scrolling landscape as in Airstrike but the first thing you notice is that the graphics of the cavern or the shaft are much better. In the early stages there are no missiles being launched but you have to bomb or shoot fuel and ammo dumps and stationary missiles whilst avoiding flak. The flak is quite dangerous, appearing at random, sometimes right on top of your ship giving you no chance to manoeuvre. As you enter and progress down the shaft there are space mines bobbing up and down which you cannot shoot, just avoid. When there are three or four in quick succession it is quite a feat of navigation to weave between them. Shortly after the space mines come force fields to navigate through followed by the Protector-type buildings with fuel tanks embedded in their roofs and the first of the launching missiles. Some of them you can shoot but others you must avoid, there is no way of telling which. So it goes on. More and more hazards, narrower passages and more difficult force fields until you reach the Master Mine. ➧

Once destroyed you reverse to dock with the mother ship above. After that, who knows? The instructions say you are warped back to the safety of deep space ready for your next Shaft assault. Whether this means a different shaft or a repeat exercise I wouldn't know. You would need to be very very good to get that far.

Although Shaft Raider takes elements from other well-known games it is nevertheless a very good arcade game. The action is certainly not spoilt by the familiarity. The sound by the way is great. Turn up your TV or better still hook into the hi-fi and you will be totally immersed in your role as Shaft Raider.

UP, UP AND AWAY

PULSAR 16K CASS

1 PLAYER 16K DISK

This is another of those deceptive games like Sea Dragon that you think are going to be easy but end up being just as frustrating as some of the games you knew from the beginning were going to be hard. What could be more serene than floating along in a hot-air balloon above the tranquil English countryside? Everything would be fine except for those nasty little kids throwing stones and flying kites and of course the vagaries of an English summer with a few storms and lightning once in a while. Then there is some idiot in a light aircraft thinking he is Waldo Pepper and trying to do aerobatics and I bet you didn't realise how dangerous bird droppings can be! The aim is to avoid all of these and land your balloon at various landing stages where you can take on extra fuel to continue your journey. It is not easy, particularly with those kids throwing stones just as you lift off.

Graphically this is superb, using redefined characters to excellent effect to create the green English countryside with trees and churches, pubs, factories and windmills. There are some nice touches such as being able to watch your deflated balloon through the foliage of the trees as it sinks behind them and seeing the kids get annoyed as you get past them! There is plenty of music as well as you pass the windmills and pubs.

The practice level is fairly hard but if you get good at it there are five levels in all. Only a one player game but you are sure to get family and friends around watching if only for the beautiful graphics. Perhaps not as complex as many of the American games but the colour and design more than makes up, and this game shows that there are in Britain at last programmers capable of producing the goods for the Atari. Up, Up & Away was originally priced at £21.95 but, as a home-grown product, has now been reduced to £14.95. At this price it represents good value for money.

MORE REVIEWS

The following programs have been received for review but time and space prevents further comments. Full reviews of some of these programs will appear in later issues.

MAGIC WINDOW by Quicksilva. A superb cassette-based character redefinition utility retailing at about £8.00. One of the best bargains you are likely to find.

THE CONSTRUCTOR by Channel 8 Software. A comprehensive Player-Missile editor allowing you to create up to 250 images and overlay or animate them and save for inclusion in your own program. Requires 48K.

MONKEYMATH from Artworx. Great maths education game for younger children with little monkeys trundling out the problems and a big chimp solving them! A combination of easy arcade action and education. A really nice program. Requires 16K.

FOUR LETTER WORD by Soflow Software. A sort of word mastermind requiring you to guess four letter words. 800 word vocabulary. Despite its title all naughty words are carefully screened out! 16K cassette.

DOODLEBUG by Soflow Software. A mini Micro-Painter allowing you to draw pictures with the joystick in 16 colours and save or retrieve to disk or cassette. Not as sophisticated as Paint or Micro-Painter but you don't need 48K and a disk drive. Comes on 16K cassette.

Disk Sort

Peter Franey, West Midlands

This program is a little too long to be used as a tutorial, however it is a useful way to illustrate the ways in which the disk directory can be used and tailored for your own needs. The program can be used in its own right but by studying the listing you may be able to learn how to use your disk drive to greater advantage. The main menu will also give you a brief insight into modifying display lists.

PROGRAM OPTIONS

1. DISK DIRECTORY—This option allows you to sort the directory in alphabetical order, either by main file name or extension. The advantages of sorting by EXTension name are that you can group together programs of similar function provided of course you use an extension representative of the program type. Both the option of main file name and extension are given in the sort routines. By altering the lines indicated in the REM statements or even deleting them completely, you may control the types of file read from the directory. Bear in mind that if this is done not all of the files will be displayed or included in the file count.

2. RUN PROGRAM—This option allows the user to select and run a program from the disk, by single stepping through the directory. If the stepping continues to the end of the directory, the program will return to the main menu. The instructions for this option are displayed on the screen.

The line by line description of the program is as follows:

10	dimension variables and goto menu
30-100	open and get directory—append to work string
110-160	sort menu
190-250	sort main file names
590-660	sort by extension
700-740	deposit file data in utility string in ranked order
745-790	print results
1100-1370	modify display list
1500-1600	display directory for option 2
1610	exclude 'list' files
1620-1660	compile correct file name format for RUN

Without the REM statements the program will take up 44 sectors on a disk.

The main disadvantage of the program is that the alphabetical sort will take several seconds. The more files that are on your disk, the longer it will take. The main reason for the longish time for this sort is that after sorting, the directory is deposited, in the correct order, in a utility string which is then used in a rolling display. This part of the program can be improved.

```
1 REM ******************************
2 REM *          DISK SORT         *
3 REM *             BY             *
4 REM *        PETER FRANEY        *
5 REM ******************************
10 DIM A$(17*63),B$(17),Z$(1),C$(17*63
),RANK(63),F$(20):FOR I=1 TO 63:RANK(I
)=0:NEXT I:F=0:GOTO 1100
30 TRAP 1670:A$="":A$=C$:F=0:OPEN #1,6
,0,"D:*.*":REM SET COUNT TO 0 AND OPEN
 DIR
40 INPUT #1,B$:REM RETRIEVE FILES
50 IF B$(11,13)="SYS" OR B$(11,13)="FL
E" OR B$(11,13)="DAT" THEN 40:REM EXCL
UDE NON LOAD FILES
55 REM ADJUST LINE 50 TO YOUR OWN
REQUIREMENTS
60 IF B$(5,16)="FREE SECTORS" THEN 100
:REM CHECK FOR DIRECTORY END
70 A$(LEN(A$)+1)=B$:F=F+1:REM APPEND F
ILE NAME TO WORK STRING AND INCREASE F
ILE COUNT
80 GOTO 40
100 CLOSE #1:IF FLAG=1 THEN RETURN :RE
M CLOSE DIRECTORY-RETURN IF OPTION 2 S
ELECTED
```

```
110 GRAPHICS 0:POKE 710,194:POKE 709,1
0:POKE 712,202:POKE 752,1
120 ? "↓↓↓YOU MAY SORT THE DIRECTORY A
S FOLLOWS"
130 ? "↓↓       1 ALPHABETICAL ORDER FO
R MAIN          EIGHT CHARACTER NAME"
140 ? :? :? "       2 ALPHABETICAL ORDE
R FOR           EXTENSION"
150 ? :? :? "       THERE ARE ";F;" FILE
S ON THIS DISK"
152 ? :? "      AND ";B$
160 ? "↓↓       ENTER OPTION";:REM WOR
DS IN INVERSE
170 CLOSE #1:OPEN #1,4,0,"K:":GET #1,X
:CLOSE #1:Z$=CHR$(X):REM GET SINGLE KE
Y STROKE
172 IF Z$="1" OR Z$="2" THEN 174
173 GOTO 170
174 ? CHR$(125):POSITION 8,12:? "SORTI
NG IN PROGRESS":REM INVERSE
180 X=VAL(Z$):ON X GOSUB 200,600:RETUR
N
190 REM RANK FILENAMES IN ALHA. ORDER
200 FOR I=1 TO F:RANK=F
210 FOR R=1 TO F
220 IF A$(17*I-14,17*I-7)<A$(17*R-14,1
7*R-7) THEN RANK=RANK-1
222 REM IF MAINNAME SAME THEN COMPARE
 EXT
225 IF A$(17*I-14,17*I-7)=A$(17*R-14,1
7*R-7) THEN IF A$(17*I-6,17*I-4)<A$(17
*R-6,17*R-4) THEN RANK=RANK-1
230 NEXT R
240 RANK(I)=RANK
250 NEXT I:GOTO 700
590 REM RANK EXTENSIONS IN ALPHABETICA
L ORDER
600 FOR I=1 TO F:RANK=F
610 FOR R=1 TO F
620 IF A$(17*I-6,17*I-4)<A$(17*R-6,17*
R-4) THEN RANK=RANK-1
625 REM IF EXT SAME THEN CHECK ALPHABE
TICAL ORDER OF MAIN NAME
630 IF A$(17*I-6,17*I-4)=A$(17*R-6,17*
R-4) THEN IF A$(17*I-14,17*I-7)<A$(17*
R-14,17*R-7) THEN RANK=RANK-1
640 NEXT R
650 RANK(I)=RANK
660 NEXT I
690 REM DEPOSIT NAMES INTO UTILITY STR
ING IN ALPHABETICAL ORDER
700 FOR I=1 TO F
710 FOR R=1 TO F
720 IF I=RANK(R) THEN C$(17*I-16,17*I)
=A$(17*R-16,17*R)
730 NEXT R
740 NEXT I:? "}"
745 POSITION 0,0
752 IF X=1 THEN ? "            SORTING B
Y MAIN FILENAME      ":REM INVERSE
754 IF X=2 THEN ? "              SORTING
 BY EXTENSION        ":REM INVERSE
755 GOSUB 756:GOTO 760
756 ? ,"FILENAME","EXT","SIZE":RETURN
:REM INVERSE
760 C=0:FOR I=1 TO F:C=C+1
770 ? ,C$(17*I-14,17*I-7),C$(17*I-6,17
*I-4),C$(17*I-2,17*I):REM PRINT MAIN N
AME,EXT AND SIZE
780 IF C=13 THEN GOSUB 1000:REM IF SCR
EEN FULL THEN HALT DISPLAY
790 NEXT I:? "↓           DIRECTORY END"
:REM WORDS IN INVERSE
800 ? "     PRESS START TO READ DIRECTO
RY":REM START IN INVERSE
810 ? "     PRESS SELECT TO RE-DISPLAY"
:REM SELECT IN INVERSE
820 ? "     PRESS OPTION TO RE-SORT":RE
M OPTION IN INVERSE
830 ? "     PRESS RETURN TO EXIT":REM R
ETURN IN INVERSE
840 POKE 764,255
850 IF PEEK(764)=12 THEN RETURN :REM [
RETURN] KEY
860 IF PEEK(53279)=6 THEN 30:REM [STAR
T] KEY
870 IF PEEK(53279)=3 THEN 110:REM [OPT
ION] KEY
880 IF PEEK(53279)=5 THEN ? CHR$(125):
GOTO 745:REM [SELECT] KEY
890 GOTO 850
1000 ? :? "     PRESS SELECT TO RE-SORT
":REM SELECT IN INVERSE
1010 ? "     PRESS START TO RE-READ DIR
ECTORY":REM START IN INVERSE
1020 ? "     PRESS OPTION TO LIST MORE
FILES":REM OPTION IN INVERSE
1022 POSITION 0,9:? "FILES:";F
1024 POSITION 0,11:? "TO LIST:";F-I
1030 IF PEEK(53279)=6 THEN RUN
1040 IF PEEK(53279)=3 THEN ? "}":C=0:G
OSUB 756:RETURN
1050 IF PEEK(53279)=5 THEN 110
1060 GOTO 1030
1100 GRAPHICS 0:POKE 559,0:DL=PEEK(560
)+PEEK(561)*256+4
1110 POKE DL-1,71:REM POKE LMS
1120 POKE DL+2,7:REM 2 LINES GR.2
1130 FOR I=3 TO 16:POKE DL+I,6:NEXT I:
REM 14 LINES OF GR.1
1140 POKE DL+17,7:POKE DL+18,7:REM 2 L
INES GR.2
1150 POKE DL+19,2:POKE DL+20,2:REM 2 L
INES GR.0
1160 POKE DL+21,65:POKE DL+22,PEEK(560
):POKE DL+23,PEEK(561):REM POKE END OF
 LIST,LOW & HIGH RETURN ADDRESS
1170 POKE 87,2:POKE 88,64:POKE 89,156:
REM POKE MODE,TOP & BOTTOM OF SCRN MEM
ORY
1180 POSITION 0,0:? #6;"    disk sort"
1190 POKE 87,1:POKE 88,104:POKE 89,156
:REM POKE MODE,TOP & BOTTOM OF SCREEN
MEMORY
1200 POSITION 0,0:? #6;"    MENU OPTION
S"
1220 POSITION 0,3:? #6;"  1...disk dir
ectory":POSITION 0,5:? #6;"  2...run p
rogram"
1230 POSITION 0,7:? #6;"  3...exit"
1235 POKE 87,2:POKE 88,128:POKE 89,157
1237 POSITION 0,0:? #6;"    ENTER OPTIO
N"
1240 POKE 87,0:POKE 88,168:POKE 89,157
1250 POSITION 0,0:? "            BY PETER
 FRANEY"
1260 POSITION 0,1:? "              MARCH
 1983"
1370 SETCOLOR 2,4,2:SETCOLOR 4,4,2:POK
E 559,34:REM SETCOLOURS-TURN ON DISPLA
Y
1380 CLOSE #1:OPEN #1,4,0,"K:":GET #1,
X:CLOSE #1:Z$=CHR$(X):IF Z$="3" THEN P
OKE 82,2:POKE 83,39:GRAPHICS 0:END
1390 IF Z$="1" OR Z$="2" THEN 1410
1400 GOTO 1380
1410 X=VAL(Z$):ON X GOSUB 30,1500:GOTO
 1100
1500 FLAG=1:GOSUB 30
1510 GRAPHICS 2+16:FLAG=0
1520 ? #6;"   disk directory"
1530 POSITION 0,9:? #6;"option-step":P
OSITION 0,10:? #6;"START-RUN DISPLAY":
REM option-step IN INVERSE
1540 POSITION 0,8:? #6;"SELECT-EXIT":R
EM INVERSE
1550 FOR I=1 TO F
1552 FOR W=1 TO 30:NEXT W:POKE 53279,7
1555 POSITION 0,2:? #6;A$(17*I-14,17*I
-7),A$(17*I-6,17*I-4)
1560 IF PEEK(53279)=5 THEN RETURN
1570 IF PEEK(53279)=3 THEN 1600
1580 IF PEEK(53279)=6 THEN GOSUB 1610
1590 GOTO 1560
1600 NEXT I:RETURN
1610 IF A$(17*I-6,17*I-4)="LST" THEN R
ETURN :REM LIST FILE SELECTED-WILL NOT
 LOAD
1615 REM LINE 1610 SET TO YOUR OWN
REQUIREMENTS
1620 F$="D:":F$(LEN(F$)+1)=A$(17*I-14,
17*I-7)
1630 L=LEN(F$):IF L>1 AND F$(L,L)=" "
THEN F$=F$(1,L-1):GOTO 1630:REM REMOVE
 UNWANTED BLANKS
1635 REM IF EXT THEN ADD DOT AND EXT
1640 IF A$(17*I-6,17*I-4)<>"   " THEN
F$(LEN(F$)+1)=".":F$(LEN(F$)+1)=A$(17*
I-6,17*I-4)
1650 POSITION 0,2:? #6;"      loading
    ":POSITION 0,3:? #6;"      ";F$
1660 TRAP 1670:RUN F$
1670 GRAPHICS 2+16:POSITION 0,4:? #6;"
 cannot load":FOR W=1 TO 200:NEXT W:R
UN
```

Character Designer

Paul Stevens

Unfortunately there were a few printing problems with the listings in Issue 3 and Paul Stevens' Character Designer suffered most. It is repeated here in full with apologies to Paul.

```
1 REM ********************
2 REM * CHARACTER DESIGNER *
3 REM *   BY PAUL STEVENS  *
4 REM *      6/3/83        *
5 REM ********************
6 REM
10 GRAPHICS 23:POKE 559,0:POKE 708,184
:POKE 709,252:POKE 710,0:POKE 711,138:
POKE 752,1
20 REM ALTER DISPLAY LIST
30 A=PEEK(560)+PEEK(561)*256+4
40 POKE A-1,70:POKE A+2,6:POKE A+5,2:P
OKE A+95,2:POKE A+97,2:POKE 560,154
50 POKE 87,1:POSITION 1,0:? #6;"charac
ter designer":REM INVERSE VIDEO
60 POKE 87,0:POSITION 2,3:? "DATA 0,0,
0,0,0,0,0,0"
70 REM POKE WRITING TO SCREEN BOTTOM
80 A=PEEK(88)+PEEK(89)*256+3720
90 FOR C=1 TO 47:READ D,E:POKE A+D,E:N
EXT C
100 DATA 5,48,6,50,7,37,8,51,9,51,11,1
79,12,180,13,161,14,178,15,180,17,52,1
8,47,20,35,21,33,22,44,23,35,24,53
110 DATA 25,44,26,33,27,52,28,37,30,36
,31,33,32,52,33,33,85,48,86,50,87,37,8
8,51,89,51,91,175,92,176,93,180
120 DATA 94,169,95,175,96,174,98,52,99
,47,101,35,102,44,103,37,104,33,105,50
,107,39,108,50,109,41,110,36
130 POKE 87,7:COLOR 1
140 REM DRAW 8x8 GRID
150 FOR A=9 TO 89 STEP 10
160 PLOT 40,A:DRAWTO 120,A:NEXT A
170 FOR A=40 TO 120 STEP 10
180 PLOT A,9:DRAWTO A,89:NEXT A
190 POKE 559,34
200 REM MOVE MARKER ON GRID
210 X=45:Y=14
220 S=STICK(0)
230 IF PEEK(53279)=6 THEN 490
240 IF PEEK(53279)=3 THEN 660
250 IF S=14 THEN GOSUB 370:Y=Y-10
260 IF S=13 THEN GOSUB 370:Y=Y+10
270 IF S=11 THEN GOSUB 370:X=X-10
280 IF S=7 THEN GOSUB 370:X=X+10
290 IF X<45 THEN X=115
300 IF X>115 THEN X=45
310 IF Y<14 THEN Y=84
320 IF Y>84 THEN Y=14
330 COLOR 0:PLOT X,Y
340 FOR DELAY=1 TO 50:NEXT DELAY
350 IF STRIG(0)=0 THEN 410
360 COLOR 2:PLOT X,Y:GOTO 220
370 POKE 53279,0:LOCATE X+1,Y,C
380 IF C=0 THEN COLOR 0:PLOT X,Y
390 RETURN
400 REM FILL SQUARE
410 LOCATE X+1,Y,C
420 IF C=0 THEN COLOR 2:D=100
430 IF C=2 THEN COLOR 0:D=200
440 SOUND 0,D,10,8
450 FOR B=Y-4 TO Y+4
460 PLOT X-4,B:DRAWTO X+4,B:NEXT B
470 SOUND 0,0,0,0:GOTO 220
480 REM SCAN GRID & CALCULATE DATA
490 COLOR 0:PLOT X,Y:PLOT 0,10:POKE 87
,0:POSITION 7,3:? "

500 POKE 87,7:D=6
510 FOR B=14 TO 84 STEP 10
520 E=256:H=0
530 FOR A=45 TO 115 STEP 10
540 E=E-E/2
550 LOCATE A+1,B,C
560 IF C=2 THEN H=H+E
570 NEXT A
580 REM PRINT DATA
590 PLOT 0,10:POKE 87,0:POSITION D,3:?
 ",";H
600 IF D=6 THEN POSITION D,3:? " "
610 IF H>=100 THEN D=D+4
620 IF H<100 THEN IF H>9 THEN D=D+3
630 IF H<10 THEN D=D+2
640 POKE 87,7:NEXT B:GOTO 220
650 REM CLEAR GRID
660 COLOR 0
670 FOR B=14 TO 94 STEP 10
680 FOR A=45 TO 125 STEP 10
690 LOCATE A,B,C:IF C<>2 THEN 720
700 FOR D=B-4 TO B+4:PLOT A-4,D
710 DRAWTO A+4,D:NEXT D
720 NEXT A:NEXT B:PLOT 0,10
730 POKE 87,0:POSITION 7,3:? "0,0,0,0,
0,0,0,0                ":POKE 87,7
740 GOTO 210
```

Public Domain Programs

A number of offers have been received from User Groups in America and Australia to exchange disks of Public Domain programs which is a great idea but does cause a problem in that there seems to be very few programs available in the U.K. to make up disks for exchange. If you read Antic magazine you will know that you can purchase disks of Public Domain programs from them at low cost and Page 6 would like to do the same making both disks and cassettes of U.K. and overseas material available to Users. The success of this depends entirely on you. If there are not enough programs to make up a U.K. disk then we will have nothing to exchange, so if you have written a program or a demonstration, send a cassette or disk to Page 6. When your program is included on a U.K. disk, your disk or tape will be returned (when the exchange programs are available) with something like 5-10 programs from overseas. Other Users will be able to purchase disks or tapes at the cost of making them available.

Sounds good, doesn't it? Well it's up to you to make it work, so send in your programs now.

NEXT ISSUE

As well as more programs, articles, hints and tips we hope to be able to publish a definitive list of all the books that are available for your Atari computer. This is where YOUR help will be invaluable. If you have any unusual books on the Atari, perhaps that you obtained from America, please drop us a line with details of the title, publisher and price and a brief description of the contents. Let's see how many books there really are for the Atari.

Merlin's Magic Square continued

```
3000 SOUND 0,128,10,8
3010 A=21:B=7:C=8:D=9:Z=3
3020 IF SQ(3)=0 THEN GOSUB 350
3030 IF SQ(3)=1 THEN GOSUB 300
3040 IF SQ(3)=0 THEN SQ(3)=1:GOTO 3060
3050 IF SQ(3)=1 THEN SQ(3)=0
3060 SOUND 0,128,10,0
3070 RETURN
3997 REM *** KEY NUMBER 4 PRESSED
3998 GOSUB 1000
3999 GOSUB 7000
4000 SOUND 0,121,10,8
4010 A=15:B=10:C=11:D=12:Z=4
4020 IF SQ(4)=0 THEN GOSUB 350
4030 IF SQ(4)=1 THEN GOSUB 300
4040 IF SQ(4)=0 THEN SQ(4)=1:GOTO 4060
4050 IF SQ(4)=1 THEN SQ(4)=0
4060 SOUND 0,121,10,0
4070 RETURN
4995 REM *** KEY NUMBER 5 PRESSED
4996 GOSUB 2000
4997 GOSUB 4000
4998 GOSUB 6000
4999 GOSUB 8000
5000 SOUND 0,108,10,8
5010 A=18:B=10:C=11:D=12:Z=5
5020 IF SQ(5)=0 THEN GOSUB 350
5030 IF SQ(5)=1 THEN GOSUB 300
5040 IF SQ(5)=0 THEN SQ(5)=1:GOTO 5060
5050 IF SQ(5)=1 THEN SQ(5)=0
5060 SOUND 0,108,10,0
5070 RETURN
5997 REM *** KEY NUMBER 6 PRESSED
5998 GOSUB 3000
5999 GOSUB 9000
6000 SOUND 0,96,10,8
6010 A=21:B=10:C=11:D=12:Z=6
6020 IF SQ(6)=0 THEN GOSUB 350
6030 IF SQ(6)=1 THEN GOSUB 300
6040 IF SQ(6)=0 THEN SQ(6)=1:GOTO 6060
6050 IF SQ(6)=1 THEN SQ(6)=0
6060 SOUND 0,96,10,0
6070 RETURN
6996 REM *** KEY NUMBER 7 PRESSED
6997 GOSUB 4000
6998 GOSUB 5000
6999 GOSUB 8000
7000 SOUND 0,91,10,8
7010 A=15:B=13:C=14:D=15:Z=7
7020 IF SQ(7)=0 THEN GOSUB 350
7030 IF SQ(7)=1 THEN GOSUB 300
7040 IF SQ(7)=0 THEN SQ(7)=1:GOTO 7060
7050 IF SQ(7)=1 THEN SQ(7)=0
7060 SOUND 0,91,10,0
7070 RETURN
7997 REM *** KEY NUMBER 8 PRESSED
7998 GOSUB 7000
7999 GOSUB 9000
8000 SOUND 0,81,10,8
8010 A=18:B=13:C=14:D=15:Z=8
8020 IF SQ(8)=0 THEN GOSUB 350
8030 IF SQ(8)=1 THEN GOSUB 300
8040 IF SQ(8)=0 THEN SQ(8)=1:GOTO 8060
8050 IF SQ(8)=1 THEN SQ(8)=0
8060 SOUND 0,81,10,0
8070 RETURN
8996 REM *** KEY NUMBER 9 PRESSED
8997 GOSUB 5000
8998 GOSUB 6000
8999 GOSUB 8000
9000 SOUND 0,72,10,8
9010 A=21:B=13:C=14:D=15:Z=9
9020 IF SQ(9)=0 THEN GOSUB 350
9030 IF SQ(9)=1 THEN GOSUB 300
9040 IF SQ(9)=0 THEN SQ(9)=1:GOTO 9060
9050 IF SQ(9)=1 THEN SQ(9)=0
9060 SOUND 0,72,10,0
9070 RETURN
```

First Steps

John Dimmer, Elgin, Scotland

FIRST STEPS takes a different format this month in that it features an article and program submitted by JOHN DIMMER as a Beginners Page. I am sure that John will be the first to admit that there are many improvements that could be made to the program and that is where you come in. See what you can learn from the program. I will pass on all your suggestions.

The only alteration which has been made to the original is to replace the original lines 10-50 with an amended line 1 and the subroutine at line 500. As originally written, the program would only run with 48K memory.

I purchased an Atari 800 at Xmas and I soon discovered that I needed to know a vast amount of information and Atari are not very helpful. I took Mike Reynolds-Jones' advice and bought 'Your Atari 400/800 Computer'. I found it to be excellent for the beginner. I also subscribed to 'The UK Atari Owners Club' run by Maplin, and between PAGE 6 and others I am slowly beginning to unravel the mysteries of computing and the Atari—well, they are mysteries to me! I also bought the Master Memory Map which is invaluable in trying to understand magazine listings.

I humbly offer my first 'long' program which is designed to work out my bank balance and also act as a monthly reminder. It includes a character set redefinition routine which I have pinched from 'The UK Atari'—issue 1 (due acknowledgments). The program will have to be adapted to your own personal requirements. Please send any suggestions for improvements to the Editor.

Line 1	clears screen and lowers Memtop for new character set
Lines 3-9	sets up initial display
Line 10	goes to subroutine at 500 to move character set and redefine ! as £
Line 55	removes cursor
Lines 61-75	sets the variables and monthly variations
Line 66	leave P=0:W(0)=0
Line 75	opens the channel for the Yes/No interlude
Lines 81-93	sets up the second display—adjust for your own use
Lines 95-110	the GET Yes/No routine
Lines 125-170	does the calculations and sets up the cheque display
Lines 180-280	using string variables, the monthly reminders are displayed. I used this area to remind me of birthdays, anniversaries, bills etc.
Lines 300-330	optional information to suit your requirements
Lines 345-347	allows you to repeat

```
0 REM USE INVERSE FOR TITLES ETC.
1 ? CHR$(125):POKE 106,PEEK(106)-5
3 GRAPHICS 0:POKE 710,240
4 POSITION 13,2:? "*** MONTHLY ***"
5 POSITION 12,5:? "*** FINANCIAL ***"
6 POSITION 15,8:? "*** AND ***"
7 POSITION 13,11:? "*** SOCIAL ***"
8 POSITION 13,14:? "*** SUMMARY ***"
9 POSITION 2,20:? "WAIT A MO, LOADING
THE MAIN PROGRAM":?
10 GOSUB 500
55 POKE 752,1:POKE 756,CHSET
61 DIM C$(12),W(50)
62 PRINT "ENTER THE MONTH - ";:INPUT C
$
66 A=100.2:B=10:C=20:D=20:E=15:F=12:G=
44:H=0:P=0:W(0)=0
69 IF C$="JANUARY" THEN H=3.5
72 IF C$="MARCH" THEN C=0
73 IF C$="APRIL" THEN C=0
74 IF C$="DECEMBER" THEN H=5
75 OPEN #4,4,0,"K:"
80 ? CHR$(125)
81 ? :? "*********- MONTHLY COMMITMENTS
 -*******":?
83 ? :? "A = MORTGAGE REPAYMENTS    !"
;A
84 ? "B = ENDOWMENT INSURANCE    !";B
85 ? "C = LOCAL RATES            !";C
86 ? "D = BANK PERSONAL LOAN     !";D
87 ? "E = VIDEO HIRE             !";E
88 ? "F = TV HIRE                !";F
89 ? "G = HIRE PURCHASE LOAN     !";G
90 ? "H = MISCELLANEOUS          !";H
```

THE PAGE 6 AWARDS

YOUR PROGRAM, ARTICLE OR REVIEW COULD BE WORTH £50 IN SOFTWARE !

In the last issue we announced a readers' poll to be conducted at the end of our first year to find the best programs, articles and reviews from the first six issues. Since then we have been talking to a few retailers and distributors and hope to be able to offer more prizes by way of sponsorship—details will be announced in Issue 6. In the meantime, if you want to have the chance of winning and would like to get your name in print, send us a program, article or an in-depth review. Don't be shy, your work is probably better than you think!

SEND YOUR CONTRIBUTION NOW



DUST COVERS


```
93 POSITION 6,20:? "ANY CHANGES? YES(Y
) OR NO(N)"
95 GET #4,Z
100 IF Z=78 THEN GOTO 125
101 ? :? "PRESS THE KEY(A-H) THAT YOU
WISH TO ALTER"
102 GET #4,Z
103 IF Z=65 THEN ? "A = !";:INPUT A
104 IF Z=66 THEN ? "B = !";:INPUT B
105 IF Z=67 THEN ? "C = !";:INPUT C
106 IF Z=68 THEN ? "D = !";:INPUT D
107 IF Z=69 THEN ? "E = !";:INPUT E
108 IF Z=70 THEN ? "F = !";:INPUT F
109 IF Z=71 THEN ? "G = !";:INPUT G
110 IF Z=72 THEN ? "H = !";:INPUT H
115 ? "}"
116 GOTO 81
125 M=A+B+C+D+E+F+G+H
126 ? CHR$(125)
127 ? :? "FINAL BANK STATEMENT BALANCE
 FIGURE IS"
128 POSITION 15,11:? "!";:INPUT X
130 X=X-M
132 ? CHR$(125)
135 POSITION 2,2:? "ARE THERE ANY CHEQ
UES NOT INCLUDED ON THE STATEMENT? Y O
R N"
140 GET #4,Z
144 IF Z=78 THEN GOTO 148
145 IF Z=89 THEN ? :? :? "ENTER CHEQUE
 VALUE  !";:INPUT W
147 W(P)=W:X=X-W:P=P+1:? "}":GOTO 135
148 ? CHR$(125)
149 POSITION 8,2:? "**-  CHEQUES ENTER
ED -**":? :? :?
150 IF W(0)=0 THEN POSITION 17,8:? "NI
L"
151 IF W(0)=0 THEN GOTO 155
152 FOR I=0 TO P-1
153 ? "                W(";I;") = !";W(I)
154 NEXT I
155 POSITION 11,18:? "ANY MORE? Y OR N
"
156 GET #4,Z
157 IF Z=89 THEN ? "}"
158 IF Z=89 THEN GOTO 145
159 ? CHR$(125)
160 ? :? "                    ";C$
161 IF X>0 THEN GOTO 165
162 IF X<0 THEN X=X*-1
163 ? :? "   THERE IS -!";X;" IN THE A
CCOUNT"
164 GOTO 170
165 ? :? "  THERE IS !";X;" IN THE ACC
OUNT"
170 ? :?
180 IF C$="FEBRUARY" THEN ? "19 FEB -H
RH PRINCE ANDREW"
190 IF C$="MARCH" THEN ? "YOUR DETAILS
"
200 IF C$="APRIL" THEN ? "YOUR DETAILS
"
210 IF C$="MAY" THEN ? "YOUR DETAILS"
220 IF C$="JUNE" THEN ? "YOUR DETAILS"
225 IF C$="JUNE" THEN ? "GAS/ELECTRIC/
TELEPHONE BILLS DUE":? "FATHERS DAY"
230 IF C$="JULY" THEN ? "29 JUL - GRAN
DMA'S BIRTHDAY"
240 IF C$="AUGUST" THEN ? "YOUR DETAIL
S"
250 IF C$="SEPTEMBER" THEN ? "YOUR DET
AILS"
260 IF C$="OCTOBER" THEN ? "YOUR DETAI
LS"
270 IF C$="NOVEMBER" THEN ? "YOUR DETA
ILS"
280 IF C$="DECEMBER" THEN ? "YOUR DETA
ILS"
290 ? :?
300 POSITION 2,16:? "FORD - ZURICH # F
IAT - PRU"
310 ? "BUILDINGS - SUN"
320 ? "CONTENTS - CORNHILL "
330 ? "ALL RISKS - GENERAL ACCIDENT "
345 POSITION 2,21:? "ANOTHER MONTH? Y
OR N"
346 GET #4,Z
347 IF Z=89 THEN CLOSE #4:GOTO 62
350 END
500 REM CHANGE CHARACTER SET
510 CHSET=PEEK(106)+1
520 FOR A=0 TO 1023:POKE CHSET*256+A,P
EEK(224*256+A):NEXT A
530 FOR A=0 TO 7
535 READ B
540 POKE CHSET*256+8+A,B
545 NEXT A
550 DATA 30,51,121,48,248,112,176,255
560 RETURN
```

This page is put aside each issue for the exclusive use of Birmingham User Group

Bug Club Call

Do you realise how many areas of responsibility there are in organising a User Group? We may not be fully undertaking them all but the ideas are all there and can be fulfilled if enough members want them to be. Or would you rather come along each meeting just for a social evening? The committee don't mind if that is what you want, it is far easier just to book the room and let everybody get on with it. The reason for saying all this is that the response to the items mentioned in the last Club Call was very poor—in fact almost non-existent. Thanks to the member who suggested an alternative meeting place, which we will look into, but apart from that nothing. Nobody is interested in Special Interest Groups. Nobody is interested in education. Is that really true?

In the future certain people on the committee will assume responsibility for the various areas of interest so that you will know who to approach when you have any ideas or want to participate. Starting at the top, Mike Reynolds-Jones will be responsible for arranging demonstrations and for liaison with retailers. Mike Aston will be responsible for education, maintaining notice boards and future projects. Keith Mason's responsibilities will include the libraries, Special Interest Groups, special events and looking after the hardware. Angus Irons, who is now Treasurer in place of Steve Gould, will assume overall responsibility for merchandising, but other individuals will be looking after specific items. Mike Reynolds-Jones will be looking after sales of cassettes produced by the Club. Steve Gould will be handling the sale of second-hand software as well as running the software library and selling blank cassettes. Colin Boswell has found a supply of disks at very reasonable cost whilst Julian Bailey will be looking into the possibility of producing tee shirts and badges. There is even more! Colin Boswell will be in charge of a technical library and Les Ellingham will assist in getting people together in Special Interest Groups. Overall responsibility for ensuring that you get a copy of the magazine will belong to Mike Aston. That's it. It is up to you to make best use of whatever can be arranged.

For those of you who have missed the last meetings, we had a demonstration of an American Atari 800 and an American monitor. You know the magazines keep talking about artifacting which when you try it produces nice wishy-washy pastel shades on your TV? Not in America it doesn't. Those programs are in full living colour! You wouldn't recognise some of the programs you thought you knew. If you have the money, it is worth investigating the possibility of importing an American machine and monitor.

Finally, a test to see how many of you are interested in special demonstrations. Mike Reynolds-Jones would like to get together a demonstration of business software for the Atari with everything he can lay his hands on including AtariWriter, Letter Perfect, Data Perfect, File Manager 800, Financial Wizard, Chipsoft packages and more. If you have any interest in business put your name down. See Mike Reynolds-Jones.

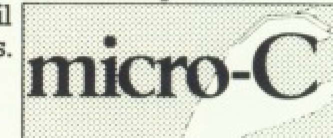
For the next Club Call I want reports from each of the people resonsible for the areas outlined above and from any individual member who wants to say something. The copy date will be 1st August. Please write it down.

Les Ellingham

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